AMSAT News Service Weekly Bulletins
Issue: ANS-124
Date: 2003-05-04
Sources: amsat-ans-2003-ans-124-weekly-yahoo.txt

----- Original Message -----
From: "Scott H. Lindsey-Stevens" <n3asa@...>
To: <ans@...>
Sent: Sunday, May 04, 2003 06:10 PM
Subject: [ans] ANS-124 AMSAT Weekly Bulletin

AMSAT NEWS SERVICE
ANS-124

ANS is a free, weekly, news and information service of AMSAT North America, The Radio Amateur Satellite Corporation. ANS reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

In this edition:
* Expedition 6 Crew Back Home
* AMSAT President Addresses SARS Concerns for Annual Meeting
* New Two-Ham ISS Crew Makes Human Spaceflight History
* Upgraded GPS satellite Shipped To Cape for July Launch
* Pegasus Puts GALEX In Orbit
* Boeing Studies Keep ISS Humming
* First Canadian Satellite in Over 30 Years to Launch
* India's Space Agency to Build a Slew of Satellites
* Gyro fails, Hubble goes to Sleep
* Shuttles won't fly again this year, lawmakers say
* Upcoming ARISS Contact Schedule

SB SAT @ AMSAT $ANS-124.01
Expedition 6 Crew Back Home

AMSAT News Service Bulletin 124.01 From AMSAT HQ
Silver Spring, MD. May 4, 2003
To All Radio Amateurs
BID: $ANS-124.01

The all ham ISS crew of Expedition 6 returned safely home on a Russian Soyuz capsule in Kazakhstan. Crew members Commander Ken Bowersox, KD5JBP, NASA ISS Science Officer Don Pettit, KD5MDT, and Nikolai Budarin, RV3FB, landed on Sunday at 0207 UTC.

This was the first time U.S. astronauts returned to a foreign country and the first time astronauts parachuted to a landing on soil instead of water.

Welcome home!

[ANS thanks NASA-TV for the above information]

/EX

SB SAT @ AMSAT $ANS-124.02
AMSAT President Addresses SARS Concerns for Annual Meeting

AMSAT News Service Bulletin 124.02 From AMSAT HQ
Silver Spring, MD. May 4, 2003

To All Radio Amateurs
BID: $ANS-124.02

To All AMSAT Members,
As your President, I am reviewing the situation for the
location of the 2002 Annual Meeting and Space Symposium.
Currently this is due to be held in Toronto later this
year in October.

The outbreak of SARS in Toronto has caused some worry by
travellers to and from Toronto, but let me assure you that
at present the SCARS outbreak appears to be under control
and is being limited to a few Health care facilities.

Should the situation change for the worse, then we will make
a change (Washington DC and Orlando are being considered)
however current indications are that within a month the
situation will have changed for the better and
that we will continue with Toronto.
I will keep you updated.
73
Robin Haighton VE3FRH
President AMSAT

UPDATE: May 2, 2003 "Robin reports that it is now 3 weeks since any member
of the Toronto general public has been confirmed with a case of SARS. The
number of people in isolation is reducing as their isolation time expires
and it would appear that the situation is improving everyday. Robin will
provide additional information on a regular basis".

[ANS thanks Robin, VE3FRH, for the above information]

/EX

SB SAT @ AMSAT $ANS-124.03
New Two-Ham ISS Crew Makes Human Spaceflight History

AMSAT News Service Bulletin 124.03 From AMSAT HQ
Silver Spring, MD. May 4, 2003
To All Radio Amateurs
BID: $ANS-124.03

There are five Amateur Radio operators aboard the International Space
Station this week. The Expedition 6 crew of Commander Ken Bowersox, KD5JBP,
NASA ISS Science Officer Don Pettit, KD5MDT, and Nikolai Budarin, RV3FB,
today welcomed Expedition 7 crew members Commander Yuri Malenchenko, RK3DUP,
and Ed Lu, KC5WKJ.

"The two crews will conduct joint operations this week," NASA announced.
"Among their handover activities, Expedition 6 crewmembers will brief the
new crew about ongoing science and station maintenance activities." The two
crews will spend six days together on the ISS.

Over the weekend, Malenchenko and Lu became the first primary ISS crew to
travel to the ISS via a Russian Soyuz TMA-2 spacecraft instead of arriving
on a US space shuttle. They launched April 26 from Baikonur Cosmodrome in
Kazakhstan. After the successful docking at the ISS, the crews began
transferring clothing and supplies carried into orbit on the new Soyuz. They
are scheduled to conduct a safety briefing later today.

NASA has grounded its shuttle fleet while it continues to investigate the
February 1 Columbia STS-107 mission disaster, in which seven astronauts
died. On his flight to the ISS, Lu wore an STS-107 patch on his spacesuit.

He told reporters that he and Malenchenko were doing what the lost astronauts and their families would have wanted them to do by continuing space exploration.

Malenchenko and Lu are the first visitors to the ISS in more than four months. After a successful docking, hatches between the ISS and the Soyuz were opened, and Malenchenko and Lu entered the ISS today (April 28) at 0727 UTC. Bowersox, Pettit and Budarin, who have been aboard the orbital outpost since November 25, will depart for Earth May 3 using the Soyuz TMA-1 vehicle that's been docked at the space station for several months.

Malenchenko and Lu are slated to spend six months aboard the station, conducting a series of scientific and educational activities. Russian Progress rockets will deliver supplies to the ISS during their stay. Both men are space-travel veterans who worked together in 2000 on an ISS construction-phase shuttle mission.

The five space travelers are scheduled to take part in a news conference April 29 at 1530 UTC. NASA TV, available on some cable systems, will carry the news conference live.

[ANS thanks ARRL for the above information]

/EX

SB SAT @ AMSAT $ANS-124.04
Upgraded GPS satellite Shipped To Cape for July Launch

AMSAT News Service Bulletin 124.04 From AMSAT HQ
Silver Spring, MD. May 4, 2003
To All Radio Amateurs
BID: $ANS-124.04

As the U.S. Air Force prepares to launch its third Global Positioning System (GPS) satellite this year, prime contractor Lockheed Martin has set a new record for operational checkout of the recently-launched GPS IIR-9 satellite.

Following the March 31 launch of GPS IIR-9, Lockheed Martin executed an accelerated on-orbit payload initialization in just 11 days -- a record for any GPS satellite -- so that the satellite could be quickly placed into service in support of the current military operations. Two months earlier, the team achieved a 20-day check out of GPS IIR-8, which was launched on Jan. 29.

The next satellite, designated GPS IIR-10, was recently shipped to Cape Canaveral from Lockheed Martin's facilities in Valley Forge, Pa. for a scheduled launch in late July.

The satellite features significant performance upgrades, including a modernized antenna panel and increased power for GPS receivers. There are eight new-generation GPS IIR spacecraft currently on orbit out of a total GPS constellation of 28 satellites.

The GPS IIR satellites are compatible with the current system and provide improved navigation accuracy, achieved by using an ITT Industries payload system. Additionally, increased autonomy and longer spacecraft life are inherent in the Lockheed Martin satellite design.

To bring new capabilities to the GPS constellation, Lockheed Martin is under contract to modernize eight existing GPS IIR spacecraft already built and in storage.

GPS modernization is being performed at the Space & Strategic Missiles - Valley Forge, Pa. facilities and ITT Industries, Clifton, N.J. facilities. The first launch of a GPS IIR-M satellite is scheduled for July 2004. The U.S. Air Force Space and Missile Systems Center, El Segundo, Calif., is the contracting agency.

[ANS thanks Space Daily for the above information]

/EX

SB SAT @ AMSAT $ANS-124.05
Pegasus Puts GALEX In Orbit

AMSAT News Service Bulletin 124.05 From AMSAT HQ
Silver Spring, MD. May 4, 2003
To All Radio Amateurs
BID: $ANS-124.05

Orbital Sciences Corporation successfully launched the National Aeronautics and Space Administration (NASA)'s Galaxy Evolution Explorer (GALEX) satellite into its targeted orbit aboard the company's Pegasus rocket Monday.

The 312-kilogram (690-pound) GALEX scientific satellite, which Orbital designed and built at its Dulles, Virginia satellite manufacturing facility, was accurately delivered into its targeted orbit approximately 690 kilometers (420 miles) above the Earth, inclined at 29 degrees to the equator.

[ANS thanks Space Daily for the above information]

/EX

SB SAT @ AMSAT $ANS-124.06
Boeing Studies Keep ISS Humming

AMSAT News Service Bulletin 124.06 From AMSAT HQ
Silver Spring, MD. May 4, 2003
To All Radio Amateurs
BID: $ANS-124.06

Boeing engineers have provided a number of studies to help NASA keep the International Space Station (ISS) viable for the foreseeable future, relying upon Russian vehicles, Soyuz and Progress, to transport cargo to the station.

Engineers at Boeing NASA Systems in Houston, many from the ISS Vehicle Integrated Performance and Resources (VIPeR) team, studied ways to maintain a safe and operable ISS.

The team was asked by NASA immediately after the space shuttle Columbia accident to study a number of options, taking into account the delay of the unique cargo ferrying capabilities of the space shuttle.

The Boeing ISS team's primary assessment effort focused on a smaller ISS crew size and assessed the consumables used by the station and its crew and the need for spare hardware.

The ISS team is relying upon the Russian vehicles as the only means of transporting cargo to the ISS until the shuttle returns to flight and/or the European Space Agency's Automated Transfer Vehicle is available.

The team tracked the primary consumables used by the station and its crew and worked closely with NASA's ISS Mission Integration group. Boeing conducted various analyses to minimize ISS supply and return requirements while optimizing the ISS vehicle performance and research.

The VIPeR team first focused on the issue of propellant on board the station, which is used to keep the ISS in the proper orbit and orientation and has been one of the most critical consumables in past studies. They concluded that currently planned Progress launches would meet propellant re-supply needs.

The next critical consumable is the water necessary to support the crew and system needs. Each crewmember uses about two kilograms of water a day for drinking, food and oxygen generation. The team looked at how water could be brought up while also examining ways to reduce water needs.

"We looked at how long we could leave three crewmembers up there and when we would go to two crew members," said Neil Lemmons, senior systems engineer with the Boeing VIPeR team.

"Without the space shuttle, it was quickly determined by all involved that a three person crew could not be sustained," said Bob Korin, manager of the Boeing VIPeR team. Keeping a crew on the ISS was important, he added, because it would "give us a set of eyes, hands and creative thinking capability to respond to things that arise."

Although there would be some limits, a two-person crew could also continue to do scientific research. The Boeing teams, including a strong effort by the safety community, looked at the risks associated with a smaller two-person crew and concluded that there were no significant safety concerns.

A two- person crew not only keeps research going but also maintains support for preventative and corrective maintenance, anomaly investigation and response, and other ISS System Operations needs that can best be done by an on-orbit crew.

Boeing and NASA engineers have studied the impact of a two-person crew on future science research. "The focus has been on new samples and consumables for the science and research apparatus already on board the ISS that require minimal space and weight," said Rick Golden, program manager of ISS payload integration.

"Our group (Boeing and its subcontractors, Teledyne Brown Engineering and United Space Alliance) ensures that interfaces between the science experiments and the space station are compatible," said Golden.

"A lot of our focus has been working the safety aspects to fly U.S. payload hardware on Soyuz and Progress launches," Golden explained. "We are positioning a select number of payloads at the Baikonur launch site in order to be able to take advantage of any space that becomes available on the upcoming Progress flights."

The Boeing ISS team reassessed the manifests for several planned shuttle launches. "We had to support system maintenance which may have required changing out filters, valves, bags and things along those lines or other items to support system repair," said Korin.

The team came up with a prioritized shopping list and looked at what they could take up without the space shuttle. The NASA/Boeing ISS team evaluated the amount of propellant, water, gas, and dry cargo that is needed to the support the ISS and its crew.

The ISS subsystem teams, including the logistics and maintenance team, played a critical role in defining the shopping list of needed items.

The Environmental Control and Life Support System group identified the selector valve and filter for the Carbon Dioxide Removal Assembly and the Internal Thermal Control System group identified the Pump Package Assembly as essential spares to be manifested on the upcoming Russian Soyuz and Progress flights.

The Soyuz is the ISS crew escape vehicle used in case of emergency and is certified for 200 days of life and is rotated every 180 to 190 days. They are normally taken to ISS by a "taxi crew" who then bring the "old" one back.

The Progress vehicle is unmanned and carries crew supplies and hardware spares to help maintain the life of ISS. There are normally 3 Progress flights a year.

"The Russians have given us about 30 kg allocation for US items to be launched on Soyuz 6S, so we have been working very hard with NASA to make sure all these items are certified to be launched on a Russian vehicle, and the Russians properly stow them for launch," according to Ray V. Gonzales, Boeing launch package manager for Russian vehicles.

"We are also working to get these items to Moscow and then to Baikonur, Khazakstan where they will be launched."

[ANS thanks Space Daily for the above information]

/EX

SB SAT @ AMSAT $ANS-124.07
First Canadian Satellite in Over 30 Years to Launch

AMSAT News Service Bulletin 124.07 From AMSAT HQ
Silver Spring, MD. May 4, 2003
To All Radio Amateurs
BID: $ANS-124.07

SCISAT-1, the first new Canadian scientific satellite since 1971, is scheduled for launch by the National Aeronautics and Space Administration (NASA) in June 2003. On February 4, 1999 the Government of Canada announced the selection of the Atmospheric Chemistry Experiment (ACE) as the scientific mission of SCISAT-1.

The major scientific goal of the Atmospheric Chemistry Experiment (ACE) mission is to measure and understand the chemical processes that control the distribution of ozone in the Earth's atmosphere, especially at high altitudes. The data that will be recorded as SCISAT-1 orbits the Earth will help Canadian scientists and policy makers to assess existing environmental policy, and to develop protective measures for improving the health of our atmosphere and preventing further ozone depletion. The ACE mission is designed to last at least two years.

SCISAT-1 is the first Canadian scientific satellite since the ISIS II satellite was launched in 1971. Here are some quick facts about the new satellite:

Total mass: 150 kg
Total power usage: 70 W
Powered by: single solar panel
Total memory: 1.5 Gigabyte
Spacecraft contractor: Bristol Aerospace : Winnipeg, Manitoba

Scientific Payload: ACE-FTS (Bomem Ltd.)
MAESTRO (MSC, U of T, EMS)
Scheduled launch date: July 2003
Launch vehicle: Pegasus XL rocket
Orbit: 650 km above the Earth
Number of times SCISAT-1 will circle the Earth in 1 day: 15
Number of sunrises and sunsets SCISAT-1 will see in 1 day: 30

[ANS thanks the Canadian Space Agency for the above information]

/EX

SB SAT @ AMSAT $ANS-124.08
India's Space Agency to Build a Slew of Satellites

AMSAT News Service Bulletin 124.08 From AMSAT HQ
Silver Spring, MD. May 4, 2003
To All Radio Amateurs
BID: $ANS-124.08

India is developing a slew of satellites for uses ranging from navigation to tele-medicine, the chief of the national space agency said.

The Indian Space Research Organisation chairman said the agency was experimenting with satellite navigation systems modelled on those used in Europe and the United States.

India is also developing a satellite network devoted exclusively to education called EDUSAT.

"Here we had a discussion with the human resource development ministry and now we are building a satellite" to help with teacher training at the primary and university levels in remote regions.

The agency is also seeking a foothold in tele-medicine, the chairman said.

"The idea is to bring the best of medical help from the city to rural areas. If everything goes well and there is a justification for a full-fledged satellite then we may go for a health satellite," he said.

Established in 1969, the ISRO launched its first satellite, Aryabhata, on April 19, 1975.

The first operational Indian remote sensing satellite was launched in 1988 while the communications satellite INSAT took off in 1982, the first of six such satellites sent into orbit.

Satellites devoted to astronomy and to study the physical characteristics of clouds are also on the drawing board.

[ANS thanks Space Daily for the above information]

/EX

SB SAT @ AMSAT $ANS-124.09
Gyro fails, Hubble goes to Sleep

AMSAT News Service Bulletin 124.09 From AMSAT HQ
Silver Spring, MD. May 4, 2003
To All Radio Amateurs
BID: $ANS-124.09

The Hubble Space Telescope has gone into an electronic deep sleep, a safe mode automatically initiated by the spacecraft because of the failure of one of the gyroscopes that is supposed to stabilize the satellite.

A problem, presumably with the gyroscope's motor, prompted the shutdown sometime Tuesday morning, said officials with NASA and the Space Telescope Science Institute, the research group that helps operate Hubble.

Engineers at Goddard Space Flight Center in Maryland were unable to restart the failed gyroscope.

Hubble has six gyroscopes, but at least three must work for it to maintain the position and stability necessary for its very precise observations. The failed Gyro No. 3, if completely broken, would be the second of the six to die.

Engineers expected to turn on one of the redundant, or backup, gyroscopes and get the telescope back to conducting science by late Wednesday night, said Ed Campion, a spokesman at NASA's Goddard center. If that works, only one backup gyro would remain.

"Hubble is a very conservative spacecraft," he said. "When it senses something is wrong, it goes into this safe mode. We expect it back online sometime tonight and we should know more by tomorrow morning."

On Tuesday, a program scientist touted accomplishments of the telescope at the 40th Space Congress going on here this week.

With the boosted capability of an advanced camera installed by spacewalking astronauts in 2002, the spacecraft is confirming the universe is expanding faster than scientists once believed. A few years ago, scientists theorized that after the Big Bang, the universe would keep expanding but at a slower rate. Slowly, an accumulation of evidence, including work done with Hubble, is suggesting the universe's expansion is speeding up.

[ANS thanks Florida Today for the above information]

/EX

SB SAT @ AMSAT $ANS-124.10
Shuttles won't fly again this year, lawmakers say

AMSAT News Service Bulletin 124.10 From AMSAT HQ
Silver Spring, MD. May 4, 2003
To All Radio Amateurs
BID: $ANS-124.10

NASA's remaining three shuttles won't return to flight this year as the agency had optimistically planned, members of Congress said Thursday.

That means NASA likely will have to rely again in February on a Russian Soyuz spacecraft to take another fresh crew to the International Space Station.

After meeting privately for an hour with retired Adm. Hal Gehman, chairman of the Columbia Accident Investigation Board, two senior House lawmakers emerged to predict NASA's shuttles would remain grounded for some time given the scope of work the independent panel is likely to recommend this summer.

[ANS thanks Florida Today for the above information]

/EX

SB SAT @ AMSAT $ANS-124.11
Upcoming ARISS Contact Schedule

AMSAT News Service Bulletin 124.11 From AMSAT HQ
Silver Spring, MD. May 4, 2003
To All Radio Amateurs
BID: $ANS-124.11

Upcoming ARISS Contact Schedule as of 2003-04-30 04:00 UTC

The ARISS (a joint effort of AMSAT, the ARRL, NASA, the ARISS international partners including Canada, Russia, the European Partners, and Japan) operations
team wishes to announce the following very tentative schedule for ARISS school
contacts. This schedule is very fluid and may change at the last minute. Remember that amateur radio use on the ISS is considered secondary. Please check the various AMSAT and ARISS webpages for the latest announcements. Changes from the last announcement are noted with (***). Also, please check MSNBC.com for possible live retransmissions
(http://www.msnbc.com/m/lv/default.asp). Listen for the ISS on the downlink of
145.80 MHz.

For information about educational materials available from ISS partner space Agencies, please refer to links on the ARISS Frequently Asked Questions page.

If you are interested in supporting an ARISS contact, then you must fill in an application. The ARISS operations mentor team will not accept a direct request to support an ARISS contact.

You should also note that many schools think that they can request a specific date and time. It does not work that way. Once an application has been accepted, the ARISS mentors will work with the school to determine a mutually agreeable date.

Websites that may be of interest include:

http://www.arrl.org/sarex
http://www.arrl.org/ariss
http://www.amsat.org
http://ariss.gsfc.nasa.gov
http://spacelink.nasa.gov/index.html
http://ehb2.gsfc.nasa.gov/edcats/educator_guide/

Your completely filled out application should be returned to the nearest coordinating ARISS region if your specific region is not listed. E-mail is the preferred method of submitting an application.

Here are the email addresses:
ARISS-Canada and all other countries not covered: ve2ka@... (Daniel Lamoureux VE2KA)
ARISS-Europe: jh.hahn@... (J. Hahn, DL3LUM / PA1MUC)
ARISS-Japan and all Region 3 countries: iaru-r3@... (Keigo Komuro JA1KAB)
ARISS-Russia: n2ww@... (Valerie Agabekov N2WW/UA6HZ)
ARISS-USA: ARISS@... (The American Radio Relay League)

ISS Expedition 6 crew:
Kenneth Bowersox KD5JBP

Nikolai Budarin RV3FB
Donald Pettit KD5MDT

ISS Expedition 7 crew:
Ed Lu KC5WKJ
Yuri Malenchenko RK3DUP

Congrats to Ken, Nikolai, and Don for all of the ARISS contacts. ARISS contacts
are off limits for the next several weeks due to the crew handover. (***)

Webster High School, Webster, N.Y.
TBD UTC

Klem Road South Elementary, Webster, N.Y.
TBD UTC

Stanford University
Palo Alto Gunn High School, California
TBD UTC

Cornell University
TBD UTC

Boulder High School, Colorado
TBD UTC

Panahou High School, Honolulu, Hawaii
TBD UTC

Fï¿½dï¿½ration Dï¿½partementale des Radioamateurs de Seine Maritime - FDARSM
Rouen, France
TBD UTC

Rains High School, Texas
TBD UTC

Challenger Learning Center of Tallahassee, Tallahassee, FL
TBD UTC

Contact was not completed

The latest ARISS announcement and successful school list is now available on the
ARISS web site. Several ways to get there.

Latest ARISS announcements and news
http://www.amsat.org/amsat/ariss/news/arissnews.txt

Successful school list
http://www.amsat.org/amsat/ariss/news/Successful_ARISS_schools.rtf

or
http://ariss.gsfc.nasa.gov

If you can not get into the GSFC site, then go directly to the RAC site. (***)

click on English (sorry I don't know French)
you are now at http://www.rac.ca/ariss/
click on News

Currently the ARISS operations team has a list of over 60 schools that we hope will be able to have a contact during 2003. As the schedule becomes more solidified, we will be letting everyone know. Current plans call for an average of one scheduled school contact per week.

73,
Charlie Sufana AJ9N

[ANS thanks Charlie Sufana, AJ9N, for the above information]

/EX

This week's ANS Editor:
Scott Lindsey-Stevens, N3ASA
n3asa@...

Via the ans mailing list at AMSAT.ORG courtesy of AMSAT-NA.
To unsubscribe, send "unsubscribe ans" to Majordomo@...